Is global warming drowning Bangladesh?

MD SAIFUL HAQUE Writes From Stockholm, Sweden

HE impacts of global warming will be felt across L the globe. Glaciers and ice caps will melt at faster rates. Occurrence of extreme floods and droughts will increase. Water stress will increase globally while water quality will deteriorate.

In South Asia, seasonal variation of water will increase. Water resource scarcity with enhanced climate variability will intensify. More than a billion people will experience water stress in the region. There's high risk of rain, riverine and glacier-melt related floods. Flooding due to sea-level rise and deterioration of water quality will intensify. And what's more grim, there are uncertainties in the projections. These are the basic findings of the UN's Intergovernmental Panel on Climate Change (IPCC)'s latest report by Bangladeshi scientist Dr Monirul Mirza, a lead author for IPCC, presented at the 2007 World Water Week high level panel discussion on climate change in Stockholm last August.

The poorest countries have always been predicted to be worst hit by human-induced global warming and climate change. Bangladesh, as the lowest riparian country in the South Asian region that faces the sea -- and drains 92 percent of the snowmelt from the vast Himalayan mountain range -is one of the most vulnerable places on earth to global warming and climate change. One of the poorest nations in the world, Bangladesh is

projected to lose 17.5 percent of its land if sea level rises about 40 inches (1 m). And sea level is already rising in the Bay of Bengal even faster than expected, and pushing salty water inland, lowering the productivity of rice -- the country's key crop -- cultivation, especially in the south of the country. Coastal flooding will threaten animals, plants, and fresh water supplies. The current danger posed by storm surges when cyclones hit Bangladesh is likely to increase. Scientists believe global warming will make cyclones in the region bigger and more frequent.

A UN report says: "Of the 12 hottest years on record 11 occurred between 1995 and 2006." What's more, the heat is only continuing to rise. Rising temperatures are creating havoc with the earth's weather, bringing too much rain to some, not enough to others.

Climate change is likely to heavily hit Bangladesh by breaking down agricultural systems, which would seriously affect Bangladesh, leaving large sections of people facing malnutrition, worsening freshwater scarcity, increasing risks of fatal diseases, and triggering mass displacement due to recurring severe floods and storms like the recent Cyclone Sidr.

Asia's largest rivers, the Ganges and the Brahmaputra, join in the world's most extensive delta and flow into the Bay of Bengal. Here lies Bangladesh, a nation of 145 nomic activity, Bangladesh faces million people already beset with grinding poverty, severe frequent floods, and now also affected by the monsoon and too little in the rising sea levels. And the Kusiara dry season.

With sea levels rising and rivers swelling in the coming decades, vast areas of the country would disappear, sparking an exodus of climate refugees. The terrible question is, where will they go? However, world leaders at the UN climate conference in mid-December, on the resort island of Bali, Indonesia, have agreed to reach a new deal on fighting global warming by 2009. The new deal sets an agenda and schedule for negotiators to find ways to reduce pollution and help poor countries adapt to environmental changes by speeding up the transfer of technology and financial assistance.

ENVIRONMENT

and Surma rivers coming from the Himalayan-foot district Assam (in India) form the Meghna -- another mighty river. The Ganges and Brahmaputra meet the Meghna and then together course south in hundreds of distributaries to form up protective banks or large dikes the largest delta on the planet.

Siltation of river-beds caused by

sediments carried by rivers from upstream countries decelerates drainage and accentuates the intensity of floods. According to an estimate (Milliman, Meade 1983, People are little aware of the effect taken from World Bank 1998), about 1.67 billion tons of suspended sediment discharged annually through the Ganges and Brahmaputra rivers, while Bangladesh cannot afford the kind Bangladesh Water Development Board estimated a suspended sediment discharge of about 1.27 billion tons excluding bed load which may amount to about 50 percent of the total sediment load. Ninety percent of the land is floodplain, and the country has the world's highest density of rivers per unit of area. Yet, with increased population and expanded ecoserious shortages of water during the dry season -- flooding during

Bangladesh's location and topography make it particularly susceptible to the effects of climate change and also hard to protect, where the rivers are constantly shifting, making it difficult to build to hold back the sea. The soil here is mud and, as such -- not steady. About one million people a year are displaced by loss of land along rivers due to constant river-bank erosion, and this is increasing. on them of sea level rise and a warming climate. Because of its poverty -- 78 percent of its population lives on less than \$2 a day -of defences planned in Europe.

World Bank reported, in 2001 that sea level was rising about 3 mm a year in the Bay of Bengal. It warned of loss of Bengal tigers in the Sundarbans, the world's largest mangrove forest -- and a world heritage site -- and threat to hundreds of bird species. 15 to 20 percent of Bangladesh is within one metre rise of sea level. The World Bank warned of a decline of rice crop up to 30 percent with predicted sea level rise. This is not a one-time event that sometime in the future will affect so many. It is a

global warming is real



tides, which affects more and more people even in time of lower river flow and good weather.

According to the latest UN Human Development Report (HDR) released in November, Bangladesh is among the countries to be worst-affected by climate

constant process of ever higher change that may cause a largescale reversal in human development. Describing the effects of climate change on the poorest countries as horrible, the HDR states: "Those who have largely caused the problem -- the rich countries -- are not going to be

those who suffer the most in the

short term. It is the poorest, who are not contributing significantly to green house gas emissions, who are the most vulnerable."

The HDR report titled 'Fighting Climate Change' cautioned "Business-as-usual scenarios will trigger large scale reversals in human development, undermining livelihoods and causing mass displacement." UNDP administrator Kemal Dervis, in his introduction to the report, said: "It is the poor, a constituency with no responsibility for the ecological debt we are running up, who face the most immediate, and severe, human costs."

With only 15 percent of world's population, rich countries account for nearly half of global carbon dioxide emissions, with the United States -- the world's top emitter of greenhouse gases -- leaving a carbon footprint that is nearly 70 times higher than in Bangladesh. Global carbon dioxide output in 2006 approached a staggering 32 billion tons, with about 25 percent of that coming from the US.

There's not much Bangladesh can do. Unless developed countries cut their greenhouse emissions, our efforts will be undercut. The country is particularly vulnerable because it has a low institutional capacity and lacks resources to combat the changing climate. But the immediate consequences of climate change are in Bangladesh -- and also in Africa. As for Bangladesh, both adaptation and mitigation measures are essential to reduce high risks. Adaptation measures in poor countries like ours should be subsi-

dised by rich countries. It is poor countries that are "suffering the brunt of climate change". But it is rich countries' greenhouse-gas emissions that have "caused this crisis in the first place". Without aid from richer countries to pay for more durable raised roads, hospitals and other infrastructures, Bangladesh will be unable to handle more disasters like deadly Sidr and frequent, ravaging deluges.

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However, world leaders at the UN climate conference in mid-December, on the resort island of Bali, Indonesia, have agreed to reach a new deal on fighting global warming by 2009. The contentious, two-week conference ended with the United States, facing angry criticism from other delegations, relenting in its opposition to a request from developing nations for more technological help for fighting climate change.

The new deal does not commit countries to specific actions against global warming. It simply sets an agenda and schedule for negotiators to find ways to reduce pollution and help poor countries adapt to environmental changes by speeding up the transfer of technology and financial assis-

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that reconciles environmental

Can carbon trade be a solution to global warming?

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ARBON trading is a market mechanism intended to tackle global warming. Though it dates back to 1989 it only took off as a market after the Kyoto -Protocol was signed by some 180 countries in December 1997, in Kyoto, Japan. The Protocol calls for 38 industrialized countries to reduce their greenhouse gas emissions between the years 2008 and 2012 to levels that are 5.2 percent lower than those of 1990. Carbon is an element stored in fossil fuels such as coal and oil. When these fuels are burned, carbon dioxide is released and acts as what we term a greenhouse gas". Carbon is the common denominator in all polluting gases that cause global warming. Under Kyoto, each participating government has its own national target for reducing carbon dioxide emissions. This was an important issue discussed in recent Bali conference. US Senate has recently discussed a climate change bill promoting carbon

The Kyoto Protocol is the first scheme that includes global trading in greenhouse gases, but the idea of trading pollutants was first tried in the 1970s when the US decided to trade sulphur dioxide and nitrous oxide to tackle acid rain. The key idea behind carbon trading is that, from the planet's point of view, where carbon dioxide

comes from is far less important than total amounts. So, rather than rigidly forcing the reduction of emissions country-by-country (or company-by-company), the market creates a choice: either spend the money to cover the costs of cutting pollution (emissions), or continue polluting (emitting) and pay someone else to cut their pollution. Carbon would be given an economic value, allowing people, companies or nations to trade it. If a nation bought carbon, it would be buying the rights to burn it, and a nation selling carbon would be giving up its rights to burn it. The value of the carbon would be based on the ability of the country owning the carbon to store it or to prevent it from being released into the atmosphere. A market would be created to facilitate the buying and selling of the rights to emit greenhouse gases. The industrialized nations for which reducing emissions is a daunting task could buy the emission rights from another nation. whose industries do not produce as much of these gases. The market for carbon is possible because the goal of the Kyoto Protocol is to reduce emissions as a collective responsibility.

There are two main ways to exchange carbon. The first is what is called a cap-and-trade scheme whereby emissions are limited and can then be traded. Under Kyoto developed countries can trade with each other. The European Trading

There's a difference between planting trees, which benefits the climate, and planting trees as part of a programme sanctioning further fossil fuel burning, which does not. "The real solution is the conservation of energy, the reduction of consumption, a more equitable use of resources and equitable development and distribution of clean and renewable low impact energy sources," states the World Rainforest Movement.

Scheme (ETS) is a cap-and-trade scheme and the largest companies-based scheme around. There are also voluntary cap-and-trade schemes. The Chicago Climate Exchange (CCX) is such a scheme. The second main way of trading carbon is through credits from projects that compensate for or "offset" emissions.

This kind of trading works like this: an eco-consultancy that brokers environmental services conducts an eco-audit of a client and comes up with a presumably accurate estimate of how much carbon the client's activities release into the atmosphere. At the other end of the operation, the firm scours the world in search of environmental services that could offset its client's emissions. These services are usually forests and tree-planting projects and are known in the business as carbon assets or carbon sinks, because trees remove carbon from the atmosphere and sequester it in their wood. The activity of these sinks is often called carbon sequestration. Using a variety of methodologies, the environmental services broker arrives at an estimate



of how much carbon a particular carbon-neutral or climate-neutral a monetary value and sells it to a carbon emissions. client. The client then subtracts carbon sink. The client is said to be

sink sequesters, and then assigns it when its carbon assets equal its

from its carbon account the carbon by the Clean Development sequestered by its newly purchased Mechanism (CDM) of the Kyoto Protocol, an international agree- examples of environmental ser-

ment that aims to deal with the threat of global warming. The CDM is one of the Protocol's market-The carbon trade is legitimized based "flexible" mechanisms, which include emissions trading and joint implementation. Two

vices brokers in the carbon trade are Climate Care and Future Forests. The London-based Climate Care is a non-profit organization that sells carbon offsets to individuals and companies and uses the money to invest in climate-friendly projects, like wilderness protection in Uganda, energy efficiency in the Indian Ocean island state of Mauritius, and small-scale hydro power in Bulgaria. Its corporate clients are mostly travel agencies like Ecotours, Whale Watch Azores, Nature Trek, and Andante.

The for-profit Future Forests, also based in England, says on its web page: "We help you to see how much CO2 is produced by the things you do, and suggest ways you can reduce those emissions. What you can't reduce, we can neutralise (or 'offset') for you -- by planting trees that reabsorb CO2 and by investing in projects that cut down CO2 emissions, such as those which use renewable energy sources."

The World Bank, one of the main players in carbon financing, estimates the value of carbon traded in 2005 to be about \$10bn. The Bank believes the carbon market has the potential to bring more than \$25bn (£14bn) in new financing for sustainable development to the poorest countries and the developing

While some NGOs and "green" businesses favour the carbon trade and view it as a win-win solution

protection with economic prosperity, other environmentalists and grassroots organizations claim that it is no solution to environmental problems such as global warming. Critics of the idea suspect that some countries will exploit the trading system and the consequences will be negative. Many argue against the ethics and the feasibility of carbon trade mechanism: it turns the earth's carbon cycling capacity into commodity that is to be traded by the same corporate hands that are destroying the climate. Nobel Peace Prize winner Al Gore and institutions like the World Bank and the Pew Center on Global Climate Change support carbon trading as a viable marketbased solution to fight global warming whereas 'Carbon Trade Watch' argue that carbon trading actually delays the crucial process of big polluters reducing their emissions.

There's a difference between planting trees, which benefits the climate, and planting trees as part of a programme sanctioning further fossil fuel burning, which does not. "The real solution is the conservation of energy, the reduction of consumption, a more equitable use of resources and equitable development and distribution of clean and renewable low impact energy sources," states the World Rainforest Movement.

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HAJONG AND CHAKMA COMMUNITIES

Ethnobiological practices help sustainable development

BIBHUTI BHUSHAN MITRA

CCORDING to United A Commission of Environment and Development, sustainable development means meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Hajong community lives in Mymensingh, Sherpur districts and Chakma in Chittagong district. One in plain land and another in hill area. The article presents here ethnobiological practices of two communities which are sustainably used.

Bangladesh covers an area of 1, 47,570 sq km with a population of 150 million. The total population of indigenous peoples in Bangladesh is approximately 3 million, out of which, 0.85 million live in Chittagong which covers an area of 13,295 sq km and others in greater

Mymensingh and Sylhet region. The ethnobiological practices in these communities are common in Bangladesh. Involving practices

are toems and taboos, sacred groves, traditional medicinal uses and traditional farming, social ethics and beliefs etc. These are also termed as traditional ecological knowledge. According to IUCN-

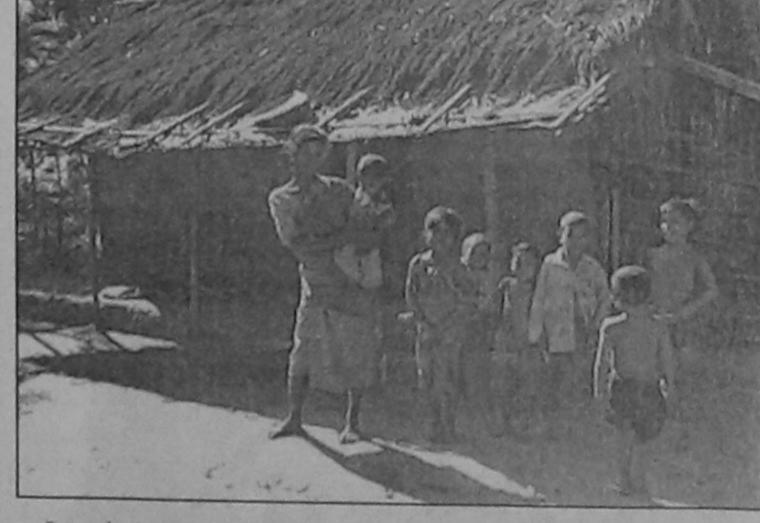
• Traditional ecological knowledge or TEK offers new biological knowledge and ecological insights;

· Some TEK system provides models of sustainable natural resource management; • TEK is relevant for protected

areas and conservation educa-• The use of TEK is often crucial for

development planning; and · TEK may be used in environmental assessment.

Clark shows that the concept of sustainable use of species posits that humanity can benefit from the exploitation of surpluses that are naturally produced by wild animals. The concept holds, for example, that it is appropriate to exploit elephants when their numbers exceed the carrying capacity of any particular habitat.



Sacred groves are the ancient natural sanctuaries where all forms of living creatures are afforded protection through the grace of

some deity. Totems and taboos are unwritten social rules that regulate human behaviour. Such constraints not only may govern human social life, but also may affect and sometimes even directly

manage, many constituents of the natural environment.

supports the plant and animal, tree diversity in farms, and localcultural practices. agroecosystem is often the product of interaction of local and formal knowledge.

survive in many other local societ- agroecosystems etc.



ies, although often in reduced forms. A large number of elements Traditional agroecosystem of local biodiversity, regardless of their use value, are protected by the

Traditional knowledge such as totems and taboos, ethos, farming, myth, folklores is vital for sustain-In spite of modernisation, tradi- able use of natural resources tional ecological ethos continue to including forest, water,

Biodiversity conservation in the context of specific local knowledge and skills and strategies; concern for well-being of future generations; reliance on local resources; restraint in resource exploitation; for nature; management, conservation and sustainable use of country, there is little inhibition in biodiversity outside formal protected areas; and, transfer of useful resources. Some of the traditional Dhaka.

species among the households, villages and larger landscape may have helped in the protection of a be helpful for sustainable life.

Madhav Gadgil says that ecosystem people have been in the business of extracting services from nature without large inputs for a very long time. Their practices have therefore moulded to working closely to nature. This repertoire includes a great variety of land races of cultivated plants and domesticated animals adapted to particular environments which often are reservoirs of valuable genes conferring resistance to disease, permitting salt or drought tolerance and so on.

Anwarul Islam comments in his paper that despite the overwhelming Muslim majority, Bangladesh is not an Islamic state yet. A democratically elected government governs it, with equal opportunities for every group to choose its an attitude of gratitude and respect own representatives. Since Bangladesh is an overpopulated exploiting the available natural

beliefs and practices of the people few plants like peepul, mehndi, tamal, and birds and animals like the spider, crab, turtle, king cobra, marsh crocodile, swift and

Hunuman langur. Most ecosystem people live in the forest area. According to Anwarul Islam's study, traditional beliefs such as worship ingredients (sanctified) protect the recorded species. Some species are protected by social farming or medicinal use, because of the traditional consumer's needs. Two types of traditional ethos have been recorded in both Hajong and Chakma communities, which help to protect the species. These traditional practices are sustainable for development. Because it not only fills up the present community needs, but also save the resource for long term future.

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